



## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 91**

**[Docket No.: FAA-2018-0914]**

#### **Changes to Surveillance and Broadcast Services**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notification of changes to surveillance and broadcast services.

**SUMMARY:** This action announces changes to the following surveillance and broadcast services (“surveillance services”) after January 1, 2020: Automatic Dependent Surveillance – Broadcast (ADS-B); Traffic Information Service – Broadcast (TIS-B); Automatic Dependent Surveillance – Rebroadcast (ADS-R); and Automatic Dependent Surveillance – Same Link Rebroadcast (ADS-SLR). These service changes will affect aircraft equipped with older ADS-B avionics that do not meet the requirements of 14 CFR 91.225. The service changes will primarily affect aircraft operating in specific airspace areas, though a few service changes will affect aircraft operating throughout the National Airspace System (NAS).

**DATES:** The FAA will initiate the actions described herein on January 2, 2020.

**FOR FURTHER INFORMATION CONTACT:** For technical questions concerning this action, contact: David E. Gray, Program Manager, Surveillance and Broadcast Services, AJM-232, Air Traffic Organization, Federal Aviation Administration, 600 Independence Avenue SW, Washington, DC 20597; telephone: 202-267-3615; email: [adsb@faa.gov](mailto:adsb@faa.gov).

#### **SUPPLEMENTARY INFORMATION:**

##### **Background**

In 2010, the FAA issued a final rule mandating equipage requirements and performance standards for Automatic Dependent Surveillance – Broadcast (ADS-B) Out avionics on aircraft

operating in certain airspace after January 1, 2020 (75 FR 30160, May 28, 2010). Use of ADS-B Out will move air traffic control (ATC) from a radar-based system to a satellite-derived aircraft location system and enhance aircraft surveillance by the FAA and Department of Defense air traffic controllers. Equipage with ADS-B avionics also provides aircraft operators with a platform for additional flight applications and services, including TIS-B<sup>1</sup> and ADS-R<sup>1</sup>, which will improve a pilot's situational awareness in aircraft not equipped with a traffic alert and collision avoidance system (TCAS). Under 14 CFR 91.225, after January 1, 2020, to operate in certain airspace, an aircraft must have equipment installed that meets the performance requirements of Technical Standard Order (TSO)-C166b or TSO-C154c ("2020 Equipment").

Between 2010 and 2014, the FAA completed the ADS-B ground infrastructure. To ensure the benefits of the ADS-B surveillance infrastructure were made available as soon as it was deployed, the FAA enabled aircraft equipped with Pre-2020<sup>2</sup> Equipment to receive TIS-B and ADS-R services even though these aircraft would not be considered rule compliant after January 1, 2020. The FAA also provided ATC surveillance services to aircraft that were equipped with Pre-2020 Equipment outside radar coverage in Alaska and offshore Gulf of Mexico airspace.

### **Service Changes to Operations in Alaska**

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<sup>1</sup> TIS-B uses secondary surveillance radars and multilateration systems to provide proximate traffic situational awareness, including position reports from aircraft not equipped with ADS-B Out or providing poor quality ADS-B Out data. TIS-B data does not provide as much information as could be received directly from an aircraft's ADS-B Out broadcast, because of the information available and required data processing. The TIS-B signal is an advisory service that is not designed for aircraft surveillance or separation, and cannot be used for either purpose.

<sup>1</sup> ADS-R collects traffic information from each ADS-B link and rebroadcasts it to ADS-B In-equipped aircraft on the other ADS-B link as needed. Note that ADS-R services are only available when both aircraft are within range of any ADS-B ground radio station, so there are regions of airspace without ADS-R coverage. ADS-B In avionics with dual link receive capability neither require nor receive ADS-R.

<sup>2</sup> For purposes of this document, Pre-2020 Equipment refers to aircraft that are in compliance with Technical Standard Order (TSO)-C166a or TSO-C154b. It does not include aircraft that are equipped with avionics compliant with TSO-C166 or TSO-C154a (or earlier). Note that aircraft equipped with ADS-B avionics compliant with TSO-C166 or TSO-C154a (or earlier) have never been provided with FAA TIS-B or ADS-R services or FAA ATC surveillance services using ADS-B.

With regard to operations in Alaska, the FAA funded a project to upgrade Pre-2020 Equipment for aircraft operating within Alaska to ensure these aircraft would meet the 2020 Equipment standards in time for the mandate.<sup>3</sup> This upgrade project will conclude in early 2019. Aircraft flying to and from Anchorage, Alaska and within Class A airspace over Alaska must also be in compliance with § 91.225 after January 1, 2020.

Pursuant to this action, on January 2, 2020, the FAA will begin terminating air traffic control surveillance services outside radar coverage for aircraft with Pre-2020 Equipment. In a 30-day period ending in June 2018 the FAA detected less than 30 aircraft equipped with Pre-2020 Equipment in the Alaskan airspace where the FAA receives ADS-B signals. Therefore, the FAA anticipates that this service change will only affect a small number of aircraft equipped with Pre-2020 Equipment.

### **Service Changes to Operations in the Gulf of Mexico**

The provisions of § 91.225 require all aircraft flying in Class E airspace at and above 3,000 feet mean sea level (MSL) over the Gulf of Mexico from the coastline of the United States out to 12 nautical miles to have operational 2020 Equipment (unless otherwise authorized by ATC) after January 1, 2020. As noted, the FAA has been providing surveillance services to approved aircraft with Pre-2020 Equipment operating in this airspace. Pursuant to this action, the FAA will begin terminating these surveillance services after January 1, 2020, to the aircraft with Pre-2020 Equipment. During a 30-day period ending in June 2018, the FAA found less than 10 aircraft with Pre-2020 Equipment were receiving ATC surveillance services in the offshore Gulf of Mexico airspace managed by Houston Center. The FAA has already informally notified these

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<sup>3</sup> The aircraft were originally equipped with the Pre-2020 Equipment by the FAA's Alaska Capstone program in the early 2000s.

operators that FAA will not provide ATC surveillance services to aircraft equipped with Pre-2020 Equipment after January 1, 2020.

### **Service Changes at Airports with ADS-B Surface Service Volumes**

To date, aircraft with Pre-2020 Equipment have been receiving ADS-SLR services in ADS-B surface service volumes (all U.S. airports with Airport Surface Detection Equipment Model X (ASDE-X) or Airport Surface Surveillance Capability (ASSC) systems). After January 1, 2020, in order to reach any airport with an ADS-B surface service volume, an aircraft will pass through airspace requiring 2020 Equipment. Accordingly, after January 1, 2020, the FAA will begin terminating provision of ADS-SLR services to aircraft with Pre-2020 Equipment. The only aircraft that will be affected by the ADS-SLR service change are those aircraft that are not equipped with 2020 Equipment as required by § 91.225.

### **NAS-wide Service Changes**

As described above, FAA will no longer use ADS-B data from Pre-2020 Equipment to provide ATC surveillance services after January 1, 2020. As such, the FAA will discontinue TIS-B and ADS-R client services NAS-wide for aircraft equipped with Pre-2020 Equipment after January 1, 2020.<sup>4</sup>

### **Implementation**

The FAA will begin making the above described changes on January 2, 2020. However, each of the changes requires the implementation of software revisions and some require changes at multiple locations NAS-wide. Because of the number of changes required and to ensure safe implementation, the changes will not be complete on January 2, 2020, but sometime soon thereafter.

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<sup>4</sup> In 2016, the FAA changed how these services were provided. More information is available at [http://rgl.faa.gov/Regulatory\\_and\\_Guidance\\_Library/rgTSO.nsf/0/45845cd583ad3cd686257d62006b3b3e/\\$FILE/TIS-B\\_Service\\_Change\\_Summary.pdf](http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgTSO.nsf/0/45845cd583ad3cd686257d62006b3b3e/$FILE/TIS-B_Service_Change_Summary.pdf).

## Summary

Starting on January 2, 2020, the FAA will begin to discontinue ATC surveillance services for aircraft equipped with Pre-2020 Equipment operating in Alaska and the offshore Gulf of Mexico airspace. The number of affected aircraft is expected to be less than 20. Any affected aircraft will receive ATC surveillance services only within FAA radar coverage over Alaska and the Gulf of Mexico.

Starting on January 2, 2020, the FAA will begin to discontinue ADS-SLR services for aircraft equipped with Pre-2020 Equipment at airports that lie immediately under the airspace defined in § 91.225(d)(1) and/or (d)(2). After January 1, 2020, these specific airspace areas require aircraft to have 2020 Equipment. As such, the only affected aircraft will be those aircraft that have failed to equip to meet the regulatory requirements effective on January 2, 2020.

Starting on January 2, 2020, in all airspace where TIS-B and ADS-R services are currently provided, the FAA will begin to discontinue TIS-B and ADS-R client services for aircraft equipped with Pre-2020 Equipment. This change will maximize the number of aircraft eligible for ATC surveillance services and support the safe provision of air traffic services. This action also reduces the resources required to provide and maintain TIS-B/ADS-R services.

Starting on January 2, 2020, the FAA will begin enabling National Accuracy Category for Velocity (NACv) filtering for TIS-B and ADS-R client status throughout the NAS.<sup>5</sup> This action will not impact any aircraft with 2020 Equipment meeting the requirements of § 91.227 or any aircraft with ADS-B avionics that meet the minimum requirements in TSO-C199 for a Class B position source.

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<sup>5</sup> A complete description of NACv filtering is available at [http://rgl.faa.gov/Regulatory\\_and\\_Guidance\\_Library/rgTSO.nsf/0/45845cd583ad3cd686257d62006b3b3e/\\$FILE/TIS-B\\_Service\\_Change\\_Summary.pdf](http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgTSO.nsf/0/45845cd583ad3cd686257d62006b3b3e/$FILE/TIS-B_Service_Change_Summary.pdf)

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